THE CASE FOR RESPONSIBILITY

Energy Probe's Argument to the Ontario Energy Board

JULY 1983

NOTE: The following document was submitted by Energy Probe to the Ontario Energy Board on July 7, 1983, at the conclusion of the OEB's month-long hearings (H.R.12) into Ontario Hydro's proposed 1984 rates for the sale of bulk power. Retail rates for electricity are not regulated by the OEB, nor can they be discussed in these hearings. In the terms of reference sent by Minister of Energy Robert Welch to the Chairman of the OEB on April 13, 1983, two further areas were expressly excluded from consideration: the "principles" of "power costing and rate making" and "[Ontario Hydro's] system expansion program". The former had been discussed in the prior year's hearings (H.R.11); the latter was excluded, as the Minister's letter acknowledged, "as in previous years".

After Hearing Ontario Hydro's Argument on July 12, 1983, the OEB reserved judgment until it filed its Reasons for Decision, on August 31, 1983. (Excerpts following page 14.)

Introduction

It is a truism that revenue policies and rates must be equitable. But throughout this hearing we have heard of Ontario Hydro practices and proposed policies which, in our view, will erode equity - both equity among present Hydro customers and equity between present and future customers. Energy Probe is concerned with what we perceive as a trend towards an unwarranted deferral of costs into the future. We are also concerned over the likely effect of this "fly now, pay later" practice, coupled with Hydro's new marketing effort and rate structures, on a given customer over time. The combined effect will be to encourage customer investment to utilize electricity, particularly for heat-sensitive applications. Eventually these customers will be faced with the costs which Ontario Hydro seeks to defer; they may face a changed rate structure which will track costs more fairly but at the heating customer's expense; and they may suffer the future consequences of financial or technical mishap which has neither been properly anticipated by Hydro nor insured against. In short, they may well suffer from accepting short-term incentives created on the basis of assumptions and forecasts which are arbitrary and extremely uncertain.

Economic Outlook

We do not quarrel with the particulars of Ontario Hydro's projection of the economic environment. We are concerned, however, with Hydro's apparent lack of concern over the historic unpredictability of the economic outlook. Although this is of greater concern for the Corporation's long-term planning than for 1984, it does lead us to conclude that reasonable margins of error should be provided in the revenue requirement. If the future is rosy, this will lead to enhanced net income and corresponding financial health; if the future proves difficult, present customers will not have enjoyed a "fool's paradise" at the expense of future consumers.

Accordingly, we urge the Board not to be overly optimistic in this respect, for the risk of optimism is an exacerbation of an already heavy rate burden on next year's customers and a

decline in financial soundness, while the risk of conservatism is a slight increase in this year's rates which will enhance the Corporation's financial soundness.

Peak and Energy

Unlike our acceptance of Hydro's economic forecasts, we do quarrel with Hydro's load forecast - the one factor above all others that has led to Hydro's present ill health. Whatever the problem has been, whether a technical methodological error, or one of a philosophy or environment which favours errors on the high side, the results have been nothing if not consistent.

When Mr. Van Veghel, Hydro's Senior Economist, noted persistent overforecasting coming from a specific source in the economic sector, he indicated that a correction was called for and that such a correction is a proper forecasting technique. Even if Hydro's latest load forecast were not based upon 1981 data plus large amounts of "unallocated load", we believe that Mr. Van Veghel's approach recommends itself for the load forecast this year more than ever, given the persistence of Hydro's over-forecasting.

While we believe Ontario Hydro's forecasting record and the testimony on this subject speak for themselves, we do wish to clarify here a few items on which apparently conflicting testimony was heard. For example, Mr. Higgins questioned the relevance of the Peak Forecast Comparison presented on the left-hand side of Ex. 3.11, pointing out that the peak figures for the calendar year were less meaningful than peak figures for a heating season. We note that Mr. Higgins was equally clear, on later cross-examination, that no such objection could be raised to the Energy Forecast Comparison presented on the right-hand side of that page. Indeed, the Board will appreciate that Ontario Hydro's record over the past 5 years of incorrectly forecasting high energy sales - as documented in the uncontradicted portion of this Exhibit - speaks directly to the issue at hand.

There was also a suggestion in the testimony of Mr. Rothman, Hydro's Chief Economist, that it was unfair to claim that 20 of Ontario Hydro's 21 most recent forecasts were too high, because a low demand in the first year of a multi-year forecast would tend to lower the absolute levels of demand in subsequent years below forecast levels even if the subsequent rate of growth (in percent per annum) were exactly as forecast or even higher.

While we question the relevance of Mr. Rothman's observation in the real world - a world in which Ontario Hydro's revenues, costs, and capacity utilization are all based on absolute levels of demand, and not on annual percentage changes - we note that Hydro's record is unchanged even using Mr. Rothman's methodology. By comparing the Energy Forecasts in Ex. 3.11 with the corresponding Actual Energy figures on the basis of percent change from the preceding year, the Board can see that Mr. Rothman's criticism is negated, and the record still stands at 20 high forecasts, and only 1 (very slightly) low forecast.

For the convenience of the Board, we have calculated those percentage changes mechanically from Ex. 3.11, and the results are as follows:

	Actual Energy (from corresponding column in Ex. 3.11)	Actual % change over prev. year	Forecast % change over previous year, as forecast in year: (All numbers are positive.) 1977	1978	1979	1980	1981	1982
1977	92853681	———	———					
1978	95371714	+2.71%	7.17%	4.11%*	———	———	———	———
1979	98126082	+2.89%	6.55%	5.58%	2.87%*	———	———	———
1980	100172735	+2.09%	6.68%	5.01%	3.89%	4.14%*	———	———
1981	101658168	+1.48%	6.23%	4.96%	3.14%	3.29%	2.26%*	———
1982	100836000	-0.81%	6.72%	5.22%	4.47%	4.51%	3.21%	3.07%*

Footnote: All data are from Ex. 3.11, which is compiled in turn from Ontario Hydro Load Forecast reports, 1977 through 1982, and 1983 Planning Load Forecast, Ex.3.10

All figures marked with an asterisk (*) in "Forecast % change over previous year..." are derived by comparing the energy demand forecast for the year of the forecast with the actual energy demand for the previous year; all other figures in this section are from comparing the energy demands forecast for the two consecutive years in the relevant Ontario Hydro forecast, after Ex. 3.11. The highlighted figure (2.87%) is the sole forecast of the last 21 which proved to be too low. (Actual growth was 2.89%.)

Fuel and Fuel-Related Matters

Our concern over coal inventory follows from our view of the risk associated with Ontario's rapidly increasing reliance on nuclear plants of nearly identical design. (This is a concern which will be discussed under the heading "financial policy".) In short, due to the inaccessibility of our coal plants by water in the winter months, we urge this Board to recommend an enlarged fuel inventory at all coal stations sufficient to cover an extended outage of all Ontario's nuclear facilities, similar to the one experienced in the U.S. following the Three Mile Island incident (after which all plants of the same basic design were shut down for a considerable time). This will have the added benefit of reducing the premium for flexibility in future coal contracts - flexibility which is required due to increased reliance on nuclear power and the associated increase in coal burning variability (T. 845).

The next few years will also be an especially economical time to initiate such stockpiling, as Hydro could avoid some of the costs of its coal-downsizing program.

Irradiated Fuel Management and Nuclear Decommissioning Costs:

In accordance with past decisions of this Board, Ontario Hydro includes provision for irradiated fuel management and decommissioning of nuclear plants in its operating budget. In the present application we note a reduction in this provision, due to Hydro's conclusion that transportation distances to the eventual

waste-disposal site are likely to be shorter than previously budgeted for. On cross-examination, Hydro's witness agreed that this was based upon an analysis of the one disposal technique currently being investigated by AECL and Hydro, but that the investigation was preliminary.

Energy Probe submits that given the very preliminary stage of the study and the well-known public opposition to disposal of radioactive substances in populated regions, this proposed reduction is premature and risks introducing bias by discouraging the investigation of more costly or distant disposal sites which may nevertheless be preferable. We view this adjustment as yet another example of Hydro's new and pervasive bias in accounting, which could be characterized as "when in doubt, leave costs and risks for future customers."

Secondary Sales

Ontario Hydro's optimistic view of nuclear risk and its discounting of the environmental and social costs of coal and nuclear generation have led to an artificially low price for exported electricity. Hydro adds no social cost factor to nuclear powered secondary sales apart from that included in its contracts with fuel suppliers, despite its acceptance of the principle of a social cost factor (as evidenced by the charge associated with coal-fired exports). To suggest that there are no social costs associated with nuclear beyond those at the mine is unreasonable and unsupportable. And even the coal-fired social costs Hydro recovers from its foreign customers are far below what is acceptable given the current acid rain situation. For Ontarians to face any additional acid gas emissions, there must be more to gain than vanishingly small reductions in electricity rates.

Hydro's presentation of its generation costs is also understated in that it does not include all associated OM&A costs (T. 1381 lines 21 - 30). Such costs associated with exports should include the allowance for major, unforeseeable maintenance which may well be a function of the degree of plant utilization. Hydro isn't sure about this. We believe that where there is doubt, it should be resolved in Ontario's favour, and not in favour of foreign buyers.

Another such cost is that associated with the risks of nuclear technology: risks to community health, risks to Hydro's financial health in the case of an accident, and the increased risk of an outage due to increased utilization. Hydro cannot provide us with an assessment of these risks but they are nevertheless real risks and, as Pennsylvanians will agree, serious ones. Again, this topic will be discussed under the heading "financial policy".

We simply point out that Hydro's response to our questions on these topics indicates that Hydro has not evaluated whether its secondary sales revenue from nuclear sales covers such external costs as routine radioactive emissions and increased production of high-level radioactive waste and tritium (T. 842).

OM&A

Marketing:

Ontario Hydro's new marketing approach quite simply

amounts to "bait and switch". Moreover, in addition to misleading Ontario Hydro's subscribers, Hydro may not even recover its own costs, and is in direct conflict with at least three primary government energy policies: support for energy conservation, energy self-sufficiency, and acid gas reductions.

Hydro has budgeted up to $25.7 million for the new Marketing Branch in 1983 and up to $30.9 million for 1984. These figures do not include the additional costs customers will bear due to Hydro's encouragement of municipal utility marketing efforts or the marketing share of the $2.7 million ad budget.

Before considering the specific failings of the program, we should not overlook one of its important underlying features. Hydro is no longer acting as a public servant responding to the will of the people. With this new approach, Hydro has chosen to reshape the public will to meet Hydro's needs, at the same time ignoring the broader social costs of such a scheme.

Little is known of the details of the strategy (Ex. 6.6.2) or its potential impact (T. 2294 & T. 2301). Mr. McCarthy, head of Hydro's Marketing Branch, has no estimate of the impact on fuel mix, fuel cost, OM&A costs (including additional staff and "demothballing" plants), long-term system expansion, borrowing, increased transformation and distribution costs, or decreased system reliability. He nevertheless feels the program will be profitable and asks Hydro's subscribers to finance it on that basis.

Mr. McCarthy does expect the strategy to lead to growth in heat-sensitive load, and Mr. Niitenberg, Hydro's Executive Vice President, Planning and Administration, agreed that this would decrease system reliability. We can also assume that these new heat-sensitive loads will require investments by Hydro's customers. These investments are relatively long-term - generally longer than Hydro currently forecasts a generation surplus - and therefore they will be a source of system expansion pressure in future. These same customers, and all customers, are called upon to bear the costs and risks of Hydro's large expenditure on this vague, untested program, coupled with their private investments in electric technology In the end, they are likely to find that Hydro's present rate projections are as wildly optimistic as their load forecasts have been throughout recent years.

The uncertainty of the benefit of "going electric" to a new customer is apparently something Hydro is worried about, witness their unwillingness to allow competitive fuel distributors to learn of the target markets. If Hydro feels a switch to electricity is in the customer's interest, what information are they afraid the customer will hear from the gas or oil companies?

In addition, this new load will, according to Hydro's President Nastich, be met by both nuclear and coal, the latter primarily U.S. coal. He agreed that this meant that Hydro's version of "Off Oil" means "Onto U.S. Coal", and that, given Canada's new-found oil self-sufficiency, the net effect is to reduce our energy self-sufficiency. Mr. Nastich argued that this dependence would be offset by U.S. reliance on our electricity. Unfortunately, the two points are entirely separate matters. Hydro's marketing program will make us more reliant on U.S. coal <u>regardless</u> of the degree to which they rely on our generators.

In addition to Hydro's decision to withdraw funding of the cogeneration potential study (T.U. 6.9.6), Mr. Palmer, Hydro's Manager of Rates, points out that private generators of electricity are one of Hydro's new target markets. Since cogeneration is generally considered (including within Ontario Hydro) one of the most energy efficient alternative energy technologies, this proposed policy shows clearly how Hydro chooses between overall energy efficiency and its own narrow economic targets. The Board must also condemn the selective disappearance of conservation-oriented advertising. As Mr. Armstrong lightheartedly pointed out, the ads read "Go Electric", not "Go Half Electric". (He might have added that the ads could also read "Go Acid Rain", since the effect of encouraging heat-sensitive load is to encourage increased acid gas emissions from the coal plants supplying this load.)

Hydro's marketing push will also create costs within several municipal systems including the large Toronto and Ottawa Hydro systems. These costs are substantial, yet Ontario Hydro has not blacked these areas out of its ad campaign.

We submit that given the uncertainty of the marketing program's positive economic contribution in broad terms and its conflict with express government policy, the amounts as budgeted are excessive in the extreme and the validity of the program should be seriously questioned in the absence of a specific government policy directive.

Fixed Costs and Depreciation

It is not within this Board's mandate to review Hydro's capital expansion program despite what Hydro's evidence purports to show us, i.e. that the $12 billion Darlington project is at best marginally economically attractive.

We have learned that Hydro cannot provide confidence limits on the capital costs associated with the completion of the plant (T. 1812), and that, according to Exhibit 7.9.5, if load growth drops to 1% with a 20% cost overrun, Darlington is a loser.

We can only speculate as to why, with such massive cost increases on a project that even members of Hydro's own Board feel is close to the line, the government forecloses public inquiry and debate, but we believe that this Board must recommend that the issue be opened. Just as this Board must deal this year with a wide range of proposed fundamental policy changes which result directly from Hydro's past capital expansion excesses - excesses which were ultra vires for this Board to examine when the key decisions were made - so will today's decisions on Darlington affect future Hydro policies and future Board hearings. These future impacts and risks must be addressed in the present, while something can still be done about them.

Exhibit 7.9.5 shows just how risky Darlington is. The column headed "20% above forecast capital cost" is not just a possibility. Darlington's history shows this to be quite likely an underestimate. Cost increases in the past year alone have resulted in a 5% increase, in real dollars (T. 1785). This likelihood of even further cost overruns, coupled with our view of the vast untapped potential for conservation and its probable

impact on load growth, leads us to conclude that Darlington is simply not a rational investment. This Board must consider further deferral or cancellation of part or all of the project a real likelihood. Given the costs which future subscribers will bear with such a move, or indeed the even greater costs of its completion, unnecessary deferral of costs by accounting changes is even more a concern.

These costs and risks might not have been with us today if Hydro had followed the common sense advice Mr. Dunn has suggested: Don't commit to a project based on an initial estimate which history has shown to be dramatically low in every case. We recommend such a change in approach.

In addition to the risks mentioned above, this Board must consider the very real probability of costs continuing to rise, and the corresponding impact on Hydro's borrowing program. With increased borrowing, we can expect declining financial soundness and a risk of higher interest charges. An allowance for such risk should be considered.

The evidence also discloses a large discrepancy between the book value of Hydro's heavy water inventory and its market value. This discrepancy unfairly distorts Hydro's financial image and creates a false asset upon which basis Hydro can borrow and further push costs into the future. The inventory should be depreciated over the shortest reasonable period to reduce this discrepancy.

Financial Policy

The outstanding feature of Ontario Hydro's proposal is the trend towards increased capitalization and extended depreciation of assets. This occurs concurrently with Hydro's announcement of a policy of no real rate increase for the 1980s despite the large number of nuclear plants coming into service with their associated interest costs.

Mr. Burdette, while defending the virtue of the policy changes, agrees that the search for the possible alternatives was indeed motivated by the substantial costs to Hydro associated with new assets coming into service (T. 2892 L.11). Even if we were to agree that all the changes are acceptable from the standpoint of accounting policy, there is a serious concern which arises in the context. How many accounting policy changes which would move costs in the opposite direction - from future to present - would also be acceptable, but have not been discovered or proposed because Hydro has no similar motivation?

The effect of such a one-sided shift is to take an array of cost-allocation possibilities, many of which can be treated in several ways equally defensibly, and choose all those that hurt future customers and none that benefit them.

This discriminatory effect is illustrated by Hydro's handling of the development cost policies in 1982-84. Hydro chose to capitalize development costs during the period, even though the proposal had not been reviewed by this Board. The development cost capitalization will lower 1984 rates. Quite apart from the concern which we have over Ontario Hydro's view of this process as displayed in its choice to implement the development cost policy without prior discussion at the OEB, this treatment of the

policy change illustrates the extent of this bias of approach. Costs are being shifted to future customers without a corresponding shift in benefit, in contravention of appropriate process and without an effort to impose balancing cost shifts where possible and fair. Energy Probe submits that the Board should view the proposed changes in this context and should not recommend changes which increase this tendency unless they are demonstrably a substantial step towards fairer cost allocation in time.

Nuclear Training Costs:

Ontario Hydro proposes to capitalize the costs of training the initial staff for each new generating facility and to depreciate this expense over 40 years. Hydro admits the average employee stay does not even approach 40 years.

The effect of the proposal will be to spread the cost over present and future customers, but leave future customers with the added cost of replacing staff. Hydro does not use 40-year depreciation for major plant parts with a known average life of less than 40 years (T. 2849). To do so would be unwarranted and unfair. Other industries do not capitalize staff training over the life of the plant. The airlines, who are in an analogous situation, spread the cost over 3-5 years (T. 3012)

Energy Probe submits that the expenditures should remain on a current basis, or at the very least, that the depreciation period be the average employee stay that Hydro has experienced historically. This approach is analogous to a "class of assets depreciation", and new costs could be added to the undepreciated total as incurred in the future. At the end of the facility's service life, the balance could be treated as a "terminal writeoff" if there are no employees remaining at Hydro, or, if training costs for all nuclear facilities are pooled the simplifying assumption could be used that remaining staff will (with some retraining) service other plants .

We submit that such an approach would more fairly match expenditures and benefits.

Nuclear Contingency Planning:

At present Hydro must carry $75 million of third-party liability insurance on its nuclear installations. This requirement is found in the federal Nuclear Liability Act. That Act goes on to provide third-party coverage beyond $75 million at the expense of the federal government in certain situations. The very existence of this Act leads to the logical conclusion that Parliament recognizes a peculiar risk associated with nuclear power plants.

Hydro has provided a copy of the insurance document and we have learned that the coverage cost is $1.3 million in 1983. The insurance does not cover damages internal to Ontario Hydro or incurred by its subscribers due to loss of plant. Nor does it cover Hydro's employees. An illustrative analogy is that of a car owner who drives with third-party liability coverage only, with no "collision" or "comprehensive" coverage, and whose car is a Rolls Royce.

In fact, Hydro's case is even more serious, as there is no other vehicle available on short notice to meet our electrical

needs, should an accident disclose a problem inherent in all the CANDU plants.

As the Board has heard, this is exactly the case that our neighbours to the south experienced following the Three Mile Island incident. The U.S., however, has a wider array of nuclear plant designs, and is much less dependent on nuclear power than Ontario is becoming, so the impacts were relatively contained. The nuclear share of total generation in Ontario will change very dramatically in the period 1983-1985, and the degree to which Ontario Hydro is willing to put all of its eggs into one basket is startling. We believe it is self-evident that reliance on any one technology for a very large portion of generation increases risks - if it were hydraulic we would be properly concerned about drought or freeze-up, while with nuclear the variables are somewhat more complex and the possible consequences far more disturbing.

We submit that this absence of adequate insurance is financially irresponsible, and is another example of costs being unfairly shifted to future customers, because it is they who will pay for a serious loss of financial soundness or an expensive cleanup after an accident. The only other source of liquid funds, given Ontario Hydro's capital borrowing constraints, is the government, and Ontario Hydro cannot be allowed to rely on that alternative. They should recover present costs in present rates. Insurance is a reasonable and prudent present cost. There has already been an assessment of probability of loss by the group of insurers providing nuclear liability coverage. It would be proper to extend that coverage by way of an assessment of the financial risk and by the actual placement of such a policy.

At the very least, one would have expected Hydro to have obtained such an objective analysis of risk and the cost of coverage, but Mr. Nastich has indicated that no such effort has been made - another startling revelation, given the evidence that Hydro cannot estimate the extent of financial shock it can withstand (T.2881).

Hydro also offers the rationale that the risk is too small to worry about. If that is the case one would expect the insurance cost to be minimal - and we might also wonder why Hydro keeps 300 tonnes of heavy water on hand for unexpected contingencies, referred to as "acute problems" (T.1796).

What is clear is that no matter how small the probability of such an accident, the consequences could be astounding. Cleanup costs following a serious accident are in the order of hundreds of millions or more. Costs of replacement power (if available) would be at least $60 million/month (T.1387). We have also heard from Mr. Holt of Hydro's Fuels Division that Hydro does not have sufficient reserve inventories of coal and oil to cover an extended winter outage of its nuclear facilities. In addition to the need for financial insurance, we submit that Hydro must insure the security of electricity supply.

These considerations would also argue against the hasty mothballing (or dismantlement) of currently surplus fossil-fuelled plant, even if such steps seem marginally attractive financially in the short term.

Tritium Removal Facilities:

The $150 million tritium removal facility will be used to remove radioactive tritium from the Darlington and Pickering stations. Most of the heavy water treated in the initial years will be water irradiated at Pickering A over its lifetime to date. The costs of this removal, both capital and operating, to the extent not offset by tritium sales, should be charged to present customers for whose benefit Pickering is being operated, just as irradiated fuel management charges are matched to generation.

Accordingly, the Board should recommend that the appropriate sum be included commencing in the 1984 rate year, and not left for future customers to pay.

Nuclear Plant Depreciation Period:

It is perhaps no surprise to this Board to learn of Energy Probe's view that the proposed 40-year life expectancy for nuclear plants is not supportable, but we have also heard of the view of other nuclear operators and regulators throughout North America. Ex. 7.7.3 shows the range of depreciation periods as 25-40 years. Hydro has chosen the outside limit. It is our view that this is more an expression of hope than an objective evaluation of service life. We submit that the choice of 40 years does not consider the risk of major unforeseen mishap or design failing as has been experienced in the U.S. where cores have become embrittled and rehabilitation costs could exceed shutdown losses.

Mr. Morison, Hydro's Director of Design and Development, expressed his personal view that the plants may live beyond the 40-year limit, but he went on to add, "I don't think it reasonable to assume they will today." (T. 2749 , L. 7)

It is our view that the forecast 40-year period does not represent an average life expectancy but rather a limiting age, and we can expect a greater number of retirements before 40 years than after. Accordingly, we submit the shift from a 30- to a 40-year period results in a shift of costs to future customers who will not enjoy the same degree of benefit and is therefore a regressive step.

<u>Net Income/Financial Results</u>

Both the Minister of Energy and the Provincial Treasurer have expressed interest in Hydro's financial soundness, and this should be no surprise to any concerned.

Hydro's independent witness, Mr. Kierans, has pointed out how close to the line Hydro is. He feels a .85 debt-to-equity ratio would be a marked deterioration and unacceptable because the resulting interest- coverage ratio would necessitate large rate increases in future years. Mr. Kierans also offered his view on the suggestion that lower rates would increase Hydro's market share. He does not have reason to believe this would have a net positive long-term effect on financial soundness and referred to such a move as "very costly for everyone" (T. 3246, 3247). He also noted that the financial ratio targets Hydro has put forward should be viewed as lower limits given the marginal situation Hydro finds itself in (T.3216).

Hydro's witnesses agreed that an improved debt-to-equity ratio in 1984 would spill over into 1985 and provide a financial soundness buffer for that year - a year in which the interest-coverage ratio will be very low and the rate increase is expected to be high.

Accordingly, Energy Probe urges the Board to recommend an improved net income result for 1984 which should include at a minimum the "scorecard changes" outlined in Exhibits 8.13 and 8.13.1.

Proposed Rates

Time-Of-Use Rates:

The five-year Royal Commission on Electric Power Planning specifically recommended that seasonally differentiated rates precede diurnally differentiated rates in its Recommendation 11.4:

> "Time-differentiated electricity rates (seasonal and time-of-day) should be introduced as soon as possible to as many classes of customers as practicable. Seasonal rates should be introduced first, to ensure that the higher long-run costs of supplying low-load-factor space-heating loads are properly recovered. Time-of-day rates should be phased in as day-night electricity supply-cost differentials become significant and obstacles to metering small customers are overcome."

This Board, in HR 11 after lengthy discussion, recommended that both forms of time-of-use differentiation be introduced, over a phase-in period with initial emphasis on seasonality. Hydro has nevertheless seen fit to introduce time-of-day rates without seasonal rates.

We ask ourselves what has changed since HR 11. Hydro points to three factors:

- Northern concern over discrimination;
- Utility cash flow; and
- Concern over the spread of impacts.

Examining these points in turn we find that the evidence discloses:

- Hydro's own rate designers still feel that seasonal differentiation is not discriminatory and that it is in fact a move toward enhanced fairness;
- Virtually all of the "Northern concern" was before the OEB in HR 12. Indeed, Mr. Palmer refers to little or no such concern over discrimination arising since that decision, and that Hydro was responding to articles and speeches in the House, not direct expression of concern by Northerners to Hydro;
- Preliminary results of Ontario Hydro's "house- matching" experiment indicate there may be very little differential impact between Northern and Southern consumers. The concern over customer acceptability appears to be based on the concerns of a few vocal and possibly misinformed persons. In contrast, Hydro is introducing mandatory time-of-day rates, despite evidence in the

U.S. of almost universal rejection of optional time-of-day rates (Ex. 9.13);

- Municipal utility concern over cash flow was "spearheaded" by one particular utility and is amenable to a phase-in compromise which would alleviate the problem; and
- There is no new "spread of impacts" since HR 11, and (as discussed above) the impact on Northerners may be less than anticipated.

As Mr. Palmer agreed, the time-of-day rates will give a price signal that encourages heating load in that most of the heating hours and the coldest temperatures fall in the off-peak period. Such load will not necessarily be "load managed" to avoid the peak, and will therefore exacerbate future peaking problems. If seasonal rates were introduced, this signal would be offset by another one in the opposite direction, and would lead to consumer decisions which more accurately reflect the costs associated with electricity generation in different time periods. The inclusion of seasonally differentiated rates will also give consumers a better indication of future rate structure, which will lead to better capital investment in energy technology, investment which may well lead to more optimal use of Ontario Hydro's generation surplus without creating a peak load problem in future winters.

The concerns expressed by government following HR 11 were tied to the inflation restraint program, and Ontario Hydro has agreed that such concerns are not relevant for 1984, barring an extension of that program.

Energy Probe strongly urges the Board not to recommend diurnally differentiated rates without seasonal differentiation. We further submit that policies to redress any social grievances of Northerners are matters of social policy best left to the political process, rather than matters of energy policy <u>per se</u>.

The Blended Rate:

The proposed blended rate offends the costing and pricing principles that this Board has determined over many years of discussion to be fair and proper.

To extend incremental costing (more formally known as "short-run marginal-cost pricing") to a particular class of customer in the absence of a comprehensive marginal-cost pricing structure is unfair and inconsistent and offends the Board's past decisions on this very question.

To insist on fuel switching as a condition for preferential rates will result in new customers being treated differently than old. (T.3363, 3364)

Mr. Palmer states that Hydro will have to reduce its charge for blended power to 2 cents per kilowatt-hour to be competitive, yet its costs (as disclosed in Exhibit 9.4.23) are 1.961 cents/kWh, and Mr. Palmer implies that there will also be some peak load shift or "leakage" which will further increase costs (T.3368). We are also told that there are no OM&A costs included and that the price is based on expected fuel ratios and therefore we can assume it does not provide for unexpected nuclear outages which will lead to more coal burning.

We submit that given the small margin, the questionable

pricing formula, the risk of higher costs, and the discriminatory application, the proposed rate should not be recommended.

The Board should also consider the effect of the introduction of temporary incentive rates on the industries involved. It may lead to market advantage which is not lasting but may nevertheless irrevocably hurt competitors, creating a long-term cost to the economy. (Ironically, some of these competitors may be harmed simply for having converted to electricity too soon t receive the discriminatory rates.) The temporary rates may also create unrealized long-term expectations which may in turn lead to capital investment with no net payback for investors or for the economy.

The Intermittent Rate:

This rate proposal suffers from the same shortcomings as the blended rate. It is a form of marginal-cost pricing being offered in an average-price-based electricity market.

The AMPCO Proposal:

Energy Probe submits that it is in principle preferable to set rates by rate structure, applicable to all, than by customer class, which treats different categories in differing manner.

The AMPCO proposal, while offering a useful analytic tool in the form of concentration factor, would entrench the direct customer class and would defeat the flexibility of Hydro and of this Board in future discussions of customer class allocation.

Impact Relief:

Mr. Kidd, consultant to AMPCO, has referred to Hydro's proposed impact relief in the direct customer class as cross-subsidization. He is correct. If the new rates are indeed a move towards fairer cost tracking, then it is those customers most affected by its introduction who have most enjoyed this historic inequity. To grant them a phase-in subsidy is to perpetuate the problem Hydro seeks to correct by its new rate structure.

Conclusion

Ontario Hydro is in the process of laying heavy bets against conservation, and the odds are against them. Hydro is doing its best to shift costs and risks to future subscribers in the hope that it will attract new customers and increased load in the interim. It is also spending large sums on marketing and system expansion with a similar hope. Hydro does so in the midst of a dramatic swing on the part of Ontarians towards conservation and efficiency. The Board has heard evidence of Hydro's inability to produce load forecasts that do not consistently overestimate load growth. It has heard evidence of consistent capital cost overruns and learned that despite Hydro's efforts, OM&A costs continue to rise. While Hydro may wish to bet on its ability to reverse these trends in an effort to sell more power, and on a reduced tendency among its subscribers to choose conservation, we submit that this Board ought not to recommend to the new Minister of Energy that he place a similar wager. Hydro has made some bad mistakes which we must all live with. At this point, we must insist on an end to

this economically, environmentally, and socially damaging binge of expansion.

We ask this Board to call upon the Minister for a reference on Ontario Hydro's system expansion, particularly on the Darlington project. We also ask this Board to recommend against the adoption of those aspects of the current proposal which seek to increase load growth, particularly heat-sensitive load growth, for such a trend will not reduce system costs and will increase peak load, providing a system expansion pressure with no economic advantage to anyone, while increasing Ontario's and Canada's dependence upon imported fuel and the cost to our environment. The key measures we take issue with in this respect are the marketing program with its focus on heat-sensitive applications and Hydro's choice of introducing time-of-day rates without seasonal rates.

We also call upon the Board to oppose the many cost deferrals which pervade the proposal. The bias towards cost capitalization and deferral coupled with the shifting of risk to future subscribers at every turn leads to an inequity which could not be overcome even if all of Hydro's load growth fantasies came true.

This Board has long provided a service to Hydro's customers and the public through its examination of, and expression of concern over the level of Ontario Hydro expenditures and consequent rate increases. We applaud such concerns, but caution the Board not to ignore Hydro's excesses in the opposite direction. If equity over time among subscribers to a high-cost utility means higher rates today, then such rates are fair and must not be avoided, for to do so will in the end hurt both the corporation and the public.

Following are excerpts from the OEB's **Reasons for Decision**, issued August 31, 1983, especially dealing with the issues raised by Energy Probe in the course of the hearings and in Argument.

The following **GLOSSARY** may prove helpful to understanding the OEB's references:

AMPCO - Ass'n of Major Power Consumers of Ontario (Hydro's biggest industrial customers)
Mr. [Brian] Davies - counsel for AMPCO
Mr. [Pierre] Genest - counsel for Ontario Hydro
Mr. [Alan] Schwartz - counsel for OMEA
Mr. [David] Poch - counsel for Energy Probe
OMEA - Ontario Municipal Electrical Association (the association of Ontario's 320 municipal Hydros)
ONGA - Ontario Natural Gas Association

EXCERPTS FROM THE O.E.B. REPORT DATED AUGUST 31, 1983

RE:Economic and Load Forecasts

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Mr. Genest argued that any increase in the GNP and GPP found by the Board cannot be mechanically applied to the load forecast and thus to the revenue requirement. Although Mr. Genest did not say so, it is apparent that the survey of customers' loads and the application of the unallocated demand, also play a prominent factor in the final determination of the load forecast and thus account in part for the varying mathematical relationships between a change in the GPP and GNP and the load.

The Board has determined earlier that the GNP and GPP forecast for 1984 should be increased and it is now left to estimate the ultimate effect such increase will have on the revenue requirement. It is the Board's opinion that given the inconsistent relationship between economic growth and the revenue requirement and the uncertain basis of the load forecast, Board Counsel's recommendation of a $54 million revenue requirement decrease because of the GPP increase is not appropriate. The Board considers that even Hydro's calculation of $20.2 million is excessive. On the other hand, Mr. Schwartz's recommendation of a decrease of $4.8 million appears too low.

Since Mr. Higgins gave his evidence the economic indicators on which he based his load forecast have been steadily improving and it appears that, by the time Hydro's Board of Directors actually sets the final rates, the indicators for 1984 will be even more favourable.

The Board therefore recommends a decrease of $15 million in the revenue requirement to take into account its conclusions that the 1984 load will be higher than Hydro presently forecasts.

RE: Coal Delivery Downsizing

The OMEA argued that Hydro should decrease its coal purchases in 1984 by the same amount that it had lowered its purchases in 1983.

Energy Probe recommended a large coal inventory sufficient to cover an extended outage of nuclear facilities. The Board notes however, that over 2000 MW of additional power could be purchased if required and in view of the growing excess capacity, it considers an increased coal inventory unwarranted.

RE: Irradiated Fuel Management & Nuclear Decommissioning Costs

Energy Probe took exception to the reduction in the transportation distance and submitted that further study was needed. Board Counsel accepted Hydro's policy as did ONGA, and the rest of the intervenors did not comment upon the issue.

Hydro's evidence indicated that there are potentially usable sites in the Canadian Shield within the suggested range and the Board therefore recommends acceptance of Hydro's estimate of 1000 kilometres as the distance from the nuclear generating station to the disposal facilities, for the purpose of establishing the IFM costs to be included within the 1984 rates.

Energy Probe and ONGA have highlighted potential future problems with the marketing plan about which Hydro is aware, such as the increase in the weather sensitive load and the effect on municipal distribution systems. Their other criticisms are not, in the Board's opinion, sufficient to warrant a recommendation to delay the program pending further study.

The Board is supportive of the marketing scheme for the reasons outlined by Mr. Schwartz, Mr. Davies, Board Counsel and Hydro's Counsel.

Mr. Poch for Energy Probe argued that government support for energy conservation would be detrimentally affected by the program, but the Board does not consider that customers' conservation habits will be altered as a direct result of its implementation. Mr. Poch's concern that Hydro will become more dependent on U.S. coal is not justifiable as nuclear units coming on-stream over the next several years should accommodate any increase in load resulting from the marketing initiatives and overall, these new units will substantially lower Hydro's need for U.S. coal in any case. Similarly, acid gas emissions will decrease as new nuclear units come into service.

The Board recommends that Hydro proceed with the marketing initiatives for 1984, but that it report in detail at next year's hearing on its progress and costs to date.

Hydro's growing prospects for the sale of generation by-products such as cobalt, steam and tritium requires comment. Included in the corporate strategy document is a short section noting that these opportunities must be

self-financing and "will require a different management focus".

The "management focus" needed to exploit these new areas, in the Board's opinion calls for private sector, profit-oriented marketing skills. The Board recommends that before major contracts are negotiated external marketing advice should be sought by Hydro and presented as evidence, at least in a preliminary fashion, in next year's hearing.

RE: Nuclear Training Costs

The Board agrees with the general principle that specialized training costs should be capitalized, but is concerned with the argument advanced by Mr. Poch that the average duration of employment of Hydro's staff is less than one half of the life of the nuclear station and in any case an employee will probably not remain in this job for the entire time he is employed by Hydro. As well, the evidence showed that some of the examples of companies which do capitalize training costs (Wardair, Nordair, Gulf, Petrosar and CP Air) amortize them over a much shorter period. Once the unit is in service, Hydro has no plans to treat these costs as anything other than normal operating costs.

In the Board's view the capitalization of specialized training costs as proposed by Hydro will cause such costs to be more equitably distributed to current and future customers but the Board considers a ten year amortization period to be appropriate than the 40 years proposed by Hydro. The Board recommends approval accordingly.

The Board estimates that amortization over 10 years rather than 40 will increase the 1984 revenue requirement by $1 million, which it recommends.

The Board notes however that Hydro's evidence on the magnitude of those trainings costs to be capitalized was not entirely satisfactory and recommends that further evidence in this regard be filed at next year's hearing.

RE: Net Income

Mr. Genest agreed that there was merit, as suggested by OMEA and Energy Probe, in retaining the indicated cost reductions in net income, in order to improve financial soundness and lessen the rate increase in 1985, rather than using them to reduce the 1984 rate increase.

In the opinion of the Board however, the emphasis is still on inflation restraint and, while rate smoothing is a consideration and early restoration of sounder financial status is important, a better balanced approach in the present economic situation is represented by Board Counsel's submission that net income be set at $350 million for 1984, which level the Board recommends as a maximum, in view of its comments on net income policy in the next section.

RE: Rate Structure

Diurnal Differentiation

Both the Board and the Royal Commission on Electric Power Planning recommended that the introduction of diurnal differentiation follow or be coupled with the seasonal differentiation of rates. Last year Hydro proposed to introduce seasonal rates in 1983 and then diurnally

differentiate them in 1984, and the Board recommended approval. Hydro, however, was subsequently requested by the Ontario government to defer the implementation of seasonal rates in 1983. It has now proposed to introduce diurnally differentiated rates in 1984 without seasonal differentiation, contending that there is no tie between seasonal and diurnal differentiation; that these features can be introduced independently of one another, and that the selection of one or the other or both is only a matter of implementation strategy.

While Board Counsel did not oppose diurnal differentiation commencing in 1984, he expressed concern that, while the diurnal feature would provide some price signals to municipal utilities that may persuade them to promote efficient use of resources, the impact of the price signal at the end use level is likely to be severely limited by lack of appropriate metering and load control facilities.

AMPCO objected strenuously to the use of the modified CPP and the consequent impact of Hydro's proposed diurnal rates on its customers. AMPCO proposed an alternative rate structure and contended that Hydro had not established customer acceptability for its proposal.

Energy Probe urged the Board not to recommend diurnally differentiated rates without seasonal differentiation.

OMEA expressed deep concern as to the fairness and acceptability of the introduction of diurnal rates in advance of seasonal rates. It recommended that seasonal rates should be implemented together with diurnal rates and that the proposed introduction of diurnal rates be deferred until both features can be introduced concurrently. OMEA

emphasized its position by stating that its Board of Directors:

> ". . . representing approximately 95 percent of the municipal utilities of Ontario specifically considered the issue of time of use rates, and concluded that time of day rates and seasonal rates go hand in hand and that the implementation of one without implementation of the other is unacceptable to the vast majority of the members of the OMEA."

Hydro's Counsel contended that there is no theoretical reason not to have diurnally differentiated rates in the absence of seasonal rates and that the rates proposed for 1984 constitute a major step towards a more equitable costing and pricing system. Noting that it "has taken us almost a decade to get to the point where we are", he said that to drop both seasonal and diurnal rates would move even further from the cost tracking objective and result in customer impacts being increased over those in the rate proposal.

While the Board is reluctant to delay the movement of rates towards the cost tracking objective, it considers that the issue of customer acceptability to be so important that it is inopportune to proceed to diurnal differentiation of rates as proposed in 1984. The Board therefore recommends deferral of diurnal differentiation and its introduction together with seasonal differentiation.

Seasonal Differentiation

Although the Board recommended acceptance of Hydro's proposed introduction of seasonally differentiated rates in 1983, Hydro deferred implementation for further study. In its 1984 proposal it eliminated this feature because of the

perceived opposition of northern customers to its impact and the introductory cash flow problems of municipal utilities.

The Board notes that Hydro still considers seasonal differentiation to be a soundly supportable move towards its cost tracking objective. Hydro is convinced that seasonal rates do not result in customer discrimination and is working with some success on studies to dispel the perception that they do. Hydro accepts that the cash flow problem can be overcome by introducing seasonal rates in the spring season.

Board Counsel, Counsel for OMEA and Energy Probe supported introduction of seasonal rates, preferably accompanied by or followed by diurnal differentiation. No other counsel commented on seasonally differentiated rates.

Inspite of the fact that this aspect of rates was not a part of Hydro's 1984 proposal, the Board reaffirms its view that seasonal differentiation is a highly desirable and fully warranted step towards the objective of reflecting cost causality in rates in a non-discriminatory manner. The Board recommends that Hydro strive to bring seasonal rates into effect in 1985, together with diurnal differentiation to offset and minimize the introductory impact. Furthermore, it recommends that both features be phased in to assist customers to accommodate to them.

Finally the Board recommends that Hydro should give early notice under its voluntary commitment to two year's lead time in anticipation of early reintroduction of seasonal differentiation.

Hydro's Counsel likened Hydro's intermittent rate to the spill rate, used by one U.S. utility, which is offered when there is spare turbine capacity for the unstorable water flow but insufficient demand at regular prices.

He submitted that the intermittent rates would reduce the risk of relying too heavily on a volatile export market.

The blended rate has been explained as including coal-fired energy in a package to help sell excess base load capacity. However, with a preponderance of coal-fired energy in the blend, it appears instead to the Board that nuclear energy is to be used to help sell coal-fired energy. This viewpoint in the Board's opinion makes the blended rate of questionable merit.

Hydro expressed concern that the blended rate as proposed may not be competitively priced and since the hearing, the public announcement of an agreement by Alberta and Canada to hold the price of oil and gas to current levels through 1984, only serves in the Board's view, to aggravate the competitive situation and underline Hydro's concern.

While the intermittent rate has an initial term of one year and is renewable on a year-to-year basis and may be considered by Hydro as experimental, in the opinion of the Board, the initial five-year contract term takes blended power out of the experimental category. Once introduced it appears that it would take at least five-years to phase out the blended rate.

The blended rate can be viewed as a form of seasonal rate. Hydro accepts that when seasonal rates are reintroduced they will supplant the blended rate. Earlier herein

the Board has recommended that Hydro introduce seasonal rates in 1985. As the consequential phase out of the blended rate only one year after its introduction would be inconsistent with its five-year contractual commitment, and in view of the other concerns expressed, the Board recommends that the blended rate not be introduced.

OTHER RECOMMENDATIONS

That the proposal for impact relief for the direct industrial customers be rejected and the new rate be phased in.

That cost allocation methodology proposed and recommended but not implemented should not be excluded from reconsideration in the review of a subsequent rate proposal.

That the blended rate proposed by Hydro be rejected.

That the intermittent rate as proposed be approved on an experimental basis subject to annual review.

That Hydro strive to bring seasonal rates into effect in 1985, together with diurnal differentiation and that early notice should be given of this intention.